WHAT IS CLAIMED IS:

1. A scanning optical system in which a plurality of light beams emitted from a plurality of light source means are deflected and scanned by a plurality of different deflecting facets of a common optical deflecting unit, and a plurality of scanned surfaces are scanned with the light beams deflected and scanned by the different deflecting facets, respectively, said scanning optical system being characterized in that the number of the light source means is 4n, the number of the light beams is 4nm (n and m are positive integers, respectively), incidence optical paths of the light beams incident on the optical deflecting unit are symmetrically disposed with respect to a first cross section and a second cross section which are perpendicular to each other, the first cross section is parallel to a rotational axis of the optical deflecting unit, and the second cross section is perpendicular to the rotational axis of the optical deflecting unit.

2. A scanning optical system according to claim 1, wherein relative angles between the light beams incident on the deflecting facet of the optical deflecting unit are different from each other between cases where the relative angle is projected on the first cross section and where the relative angle is

projected on the second cross section.

3. A scanning optical system according to claim 1, wherein a plurality of optical elements are provided corresponding to the light beams emitted from the light source means, respectively, the optical elements are constructed in a united form to form a compound imaging element, the compound imaging element is disposed between the light source means and the optical deflecting unit, and the optical elements constituting the compound imaging element form linear images of the light beams on or on a place close to the deflecting facet, respectively.

4. A scanning optical system according to claim 3, wherein each of the optical elements constituting the compound imaging element has different powers in a main scanning cross section and a sub-scanning cross section, respectively.

5. A scanning optical system according to claim 3, wherein the compound imaging element includes a cylindrical lens having power in a sub-scanning cross section.

6. A scanning optical system according to claim 3, wherein a condition of $0.7<(L/\sin\theta)/Fs<1.3$ is

satisfied where Fs is a focal length of an optical element constituting the compound imaging element in the sub-scanning cross section, 2θ is a relative angle between optical axes of the optical elements of the compound imaging element in the sub-scanning cross section, and 2L is a distance between optical axes of the optical elements on the compound imaging element in the sub-scanning cross section.

7. A scanning optical system according to claim 3, wherein the compound imaging element includes a first optical element and a second optical element, and the first compound optical element causes the light beams to enter a first deflecting facet of the optical deflecting unit and the second compound optical element causes the other light beams to enter a second deflecting facet, such that these plural light beams can be simultaneously deflected and scanned to scan the different scanned surfaces, respectively.

8. A scanning optical system according to claim 3, wherein the compound imaging element includes a first optical element and a second optical element, and the first optical element causes the light beams to enter a first deflecting facet of the optical deflecting unit and the second optical element causes

the other light beams to enter the first deflecting facet, such that these plural light beams can be simultaneously deflected and scanned to scan the different scanned surfaces, respectively.

9. A scanning optical system according to claim 7, wherein the first optical element and the second optical element are constructed in a united form.

10. A scanning optical system according to claim 3, wherein a synchronous detecting optical element for guiding a portion of the light beam deflected and scanned by the optical deflecting unit is constructed in a united form with the compound imaging element.

11. A scanning optical system according to claim 10, wherein the synchronous detecting optical element is disposed away from the optical elements constituting the compound imaging element in a sub-scanning cross section.

12. A scanning optical system according to claim 3, wherein one of incidence and emergence surfaces of each of the optical elements is an anamorphic surface, the other is a rotationally symmetric surface or a plane surface, and optical

axes of the optical elements are symmetrically disposed with respect to two mutually perpendicular planes, respectively.

13. A scanning optical system in which a plurality of light beams emitted from a plurality of light source means are caused to enter a deflecting facets of an optical deflecting unit at different angles in the sub-scanning cross section, and a scanned surface is scanned with the light beams deflected and scanned by the deflecting facet, respectively, said scanning optical system being characterized in that optical elements are provided for the light beams emitted by the plural light source means, respectively, the optical elements are constructed in a united form to construct a compound imaging element, the compound imaging element is disposed between the light source means and the optical deflecting unit, the optical elements constituting the compound imaging element guide the light beams to the deflecting facet, and angles $\alpha 1$ and $\alpha 2$ formed between optical axes of two optical elements of the optical elements and a normal to the deflecting facet are different from each other between the two optical elements.

14. A scanning optical system according to

claim 13, wherein each of the optical elements constituting the compound imaging element has different powers in a main scanning cross section and a sub-scanning cross section, respectively.

15. A scanning optical system according to claim 13, wherein the compound imaging element includes a cylindrical lens having power in a sub-scanning cross section.

16. A scanning optical system according to claim 13, wherein a condition of $0.7<(L/\sin\theta)/Fs<1.3$ is satisfied where Fs is a focal length of an optical element constituting the compound imaging element in the sub-scanning cross section, 2θ is a relative angle between optical axes of the optical elements of the compound imaging element in the sub-scanning cross section, and 2L is a distance between optical axes of the optical elements on the compound imaging element in the sub-scanning cross section.

17. A scanning optical system according to claim 14, wherein a condition of $0.7<(L/\sin\theta)/Fs<1.3$ is satisfied where Fs is a focal length of an optical element constituting the compound imaging element in the sub-scanning cross section, 2θ is a relative angle between optical axes of the optical elements of

the compound imaging element in the sub-scanning cross section, and 2L is a distance between optical axes of the optical elements on the compound imaging element in the sub-scanning cross section.

18. A scanning optical system according to claim 15, wherein a condition of $0.7<(L/\sin\theta)/Fs<1.3$ is satisfied where Fs is a focal length of an optical element constituting the compound imaging element in the sub-scanning cross section, 2θ is a relative angle between optical axes of the optical elements of the compound imaging element in the sub-scanning cross section, and 2L is a distance between optical axes of the optical elements on the compound imaging element in the sub-scanning cross section.

19. A scanning optical system according to claim 13, wherein the compound imaging element includes a first optical element and a second optical element, and the first optical element causes the light beams to enter a first deflecting facet of the optical deflecting unit and the second optical element causes the other light beams to enter a second deflecting facet, such that these plural light beams can be simultaneously deflected and scanned to scan the different scanned surfaces, respectively.

20. A scanning optical system according to claim 13, wherein the compound imaging element includes a first optical element and a second optical element, and the first optical element causes the light beams to enter a first deflecting facet of the optical deflecting unit and the second optical element causes the other light beams to enter the first deflecting facet, such that these plural light beams can be simultaneously deflected and scanned to scan the different scanned surfaces, respectively.

21. A scanning optical system according to claim 19, wherein the first optical element and the second optical element are constructed in a united form.

22. A scanning optical system according to claim 13, wherein a synchronous detecting optical element for guiding a portion of the light beam deflected and scanned by the optical deflecting unit is constructed in a united form with the compound imaging element.

23. A scanning optical system according to claim 22, wherein the synchronous detecting optical element is disposed away from the optical elements constituting the compound imaging element in a sub-

scanning cross section.

24. A scanning optical system according to claim 13, wherein one of incidence and emergence surfaces of each of the optical elements is an anamorphic surface, the other is a rotationally symmetric surface or a plane surface, and optical axes of the optical elements are symmetrically disposed with respect to two mutually perpendicular planes, respectively.

25. A compound imaging element comprising:

a plurality of optical elements, one of incidence and emergence surfaces of each of the optical elements being an anamorphic surface, the other being a rotationally symmetric surface or a plane surface; and

wherein optical axes of the optical elements are symmetrically disposed with respect to two mutually perpendicular planes, respectively, and the optical elements are constructed in a united form.

26. An image forming apparatus comprising:

a scanning optical system recited in any one of claims 1 to 22;

a photosensitive body disposed on the scanned surface;

developing means for developing an electrostatic latent image, which is formed on the photosensitive body by the light beam scanned by the scanning optical system, as a toner image;

transferring means for transferring the developed toner image onto a transferring material; and

fixing means for fixing the transferred toner image on the transferring material.

27. An image forming apparatus comprising:

a scanning optical system recited in any one of claims 1 to 22; and

a printer controller for converting code data input from an external apparatus into image signals to supply the image signals to the scanning optical system.